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See page 6-9



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RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/081,327A

DATE: 07/25/2002

TIME: 08:42:12

Input Set : A:\SEQUENCE 081,327.txt

Output Set: N:\CRF3\07252002\J081327A.raw

3 <110> APPLICANT: Huang, Tim Hui-Ming
 5 <120> TITLE OF INVENTION: HIGH-THROUGHPUT METHODS FOR DETECTING DNA METHYLATION
 7 <130> FILE REFERENCE: 40629-2
 9 <140> CURRENT APPLICATION NUMBER: US 10/081,327A
 C--> 10 <141> CURRENT FILING DATE: 2002-07-11
 12 <150> PRIOR APPLICATION NUMBER: 09/497,855
 13 <151> PRIOR FILING DATE: 2000-02-04
 15 <150> PRIOR APPLICATION NUMBER: 60/120,592
 16 <151> PRIOR FILING DATE: 1999-02-18
 18 <150> PRIOR APPLICATION NUMBER: 60/118,760
 19 <151> PRIOR FILING DATE: 1999-02-05
 21 <160> NUMBER OF SEQ ID NOS: 54
 23 <170> SOFTWARE: PatentIn version 3.1
 25 <210> SEQ ID NO: 1
 26 <211> LENGTH: 630
 27 <212> TYPE: DNA
 28 <213> ORGANISM: Homo sapiens
 30 <220> FEATURE:
 31 <221> NAME/KEY: misc_feature
 32 <222> LOCATION: (1)..(630)
 33 <223> OTHER INFORMATION: All n's are unknown
 36 <400> SEQUENCE: 1

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W--> 39 ataaaaacaaa actttaccna tcgtatttgg gtgaggggct gggaaatggta taactgtttc	120
W--> 41 ctctgcataa attttagcgt nttaatcggtt ggatngagat ttgcataagt ttgacgggag	180
W--> 43 ggtcntgtnt tcgtttcaag tatgggtnat tgtccacacc tttcttnaa gantngcgcg	240
W--> 45 gggggcctaa ttcgaanggt naananaaaa aggaagacng angtgccana atgnacccca	300
W--> 47 atccacanct tatgganan ctcccaacgc gttngatgca aacttgaatn tcnnntactnt	360
W--> 49 ccccttaaatn ncttggngtt atcntggccn aactgtttcc tggnttaaaa tnnttanccg	420
W--> 51 ctccccattc cnctctannt acnaancgg aagcttnaat tttnaanncc nggggtncc	480
W--> 53 aatganttaa ctaacccct tanttncctt nnnccccngc ccgnttcnat ccggaaactn	540
W--> 55 tttccccctt ncnnnttatta atccnccncc cccggaaaan gcggttgctt tntggccct	600
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63 <213> ORGANISM: Homo sapiens	
65 <220> FEATURE:	
66 <221> NAME/KEY: misc_feature	
67 <222> LOCATION: (1)..(913)	
68 <223> OTHER INFORMATION: All n's are unknown	
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Input Set : A:\SEQUENCE_081,327.txt
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W--> 74 aggtcgacca taaggagnca ccagctcgcc ccacttcacc tncggcggng ctggacacga 120
 76 gctggcgct ataatctgca gaacgtccc ggccgaaaag gatgggaaac acacctggag 180
 W--> 78 ccagggcgaa gacatctaga gatcaaagg gaatggaaga aaacccggnt aggttctctc 240
 W--> 80 agagcaagac ccctttgctg gaaacatagg nttctaagcc cggtgggtgg gagcaacagg 300
 W--> 82 gtgggagaac tnagactnca gcctgaacct agcgctnccc cacctgctn cccatnaaga 360
 W--> 84 tcccgtattt ggcagggtcca gacccgcca aacttcaaga ncccgccgt agggacaggc 420
 W--> 86 aaacttgca cgacangggg gacccgaacg gnacccccc ggagggaaan aagggcngg 480
 W--> 88 agatcagacc gttggtnnng gtnaaatnng gcnaaaattnt ttnnaacaca cntggtnng 540
 W--> 90 tggAACCTT aatcctttt tagnctcnct tgnctgcac ctntttagn gggaaatcc 600
 W--> 92 cctggggngn tnnnnctt gcntngccaa ntgggngtn ngtnnnnntt ttntccatn 660
 W--> 94 ntnnntgggt tggccngatg tgggnntnt ttccngntt ncnngnctt ttgggggnnn 720
 W--> 96 aanatngncn ttattntggn gaaaaananaa agcttggnaa ttttttgggg aaanttgnnn 780
 W--> 98 ccnnccgggt ngnaangnn ttntttntt nngntctant ncgnntnnggt ccnttttnnc 840
 W--> 100 cngtnnngng ngaggtnc nncnnnggn ngcctnngt tgggatttt tttggggcnc 900
 W--> 102 ctgnngngtt tgg 913
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 106 <211> LENGTH: 952
 107 <212> TYPE: DNA
 108 <213> ORGANISM: Homo sapiens
 110 <220> FEATURE:
 111 <221> NAME/KEY: misc_feature
 112 <222> LOCATION: (1)..(952)
 113 <223> OTHER INFORMATION: All n's are unknown
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 W--> 121 gccatttcct tcctccgggg gtctttnta aaaganctcc ggnacnccct ccccatcccc 180
 W--> 123 tggagtttgt tctgcgcgga acttancctt ggggagagga ntagccccgg nctgtgaccc 240
 W--> 125 cggccttcg ganngtgntc tgctntccct tactggcccc tcccttgc ttccagatac 300
 W--> 127 cctgtgtaac naactcgacc agnancggaa ggcgcgtta tgcatccagc anaaattgaa 360
 W--> 129 aggtgcggaa ccggnaaaaca aagatangag ggntnctgng tgccngccgt nctgcnactg 420
 W--> 131 aatgaatgaa tagtngact agtgaggaag nccaccatcc acngnggatc angatgtntg 480
 W--> 133 anngataaaa ntggnaactg attttattgn gagagctccc aacgcattgg atgcatacg 540
 W--> 135 tngagtatct ataagnnnca cctaaataac ttgaccnaat catggcaat aactggnncc 600
 W--> 137 tgtngaaan tgnnatccct naccaancn cacaacatnc tacccnaaa ccataaaaagt 660
 W--> 139 gtaaaaacccn tggggttccc caatnnantg aaccaacctc ncantnaatt ncncncc 720
 W--> 141 ctcacnanc ccttttcnnaa ccnnaaaacc cttcntaccc actncattaa atgaancncc 780
 W--> 143 caccggccct aaaaancnn ntttncaaat tngccccct tncncnccntc ctntanntan 840
 W--> 145 tnnactccna tanctcngnc ctatcnntt tcnannaaac nnatcaanc tnanncaaaa 900
 W--> 147 ncnnnnnncc cnattcccc naaaccnnn gaaaaccnnn taaaaaacan tt 952
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 152 <212> TYPE: DNA
 153 <213> ORGANISM: Homo sapiens
 155 <220> FEATURE:
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 157 <222> LOCATION: (1)..(1059)
 158 <223> OTHER INFORMATION: All n's are unknown
 161 <400> SEQUENCE: 4

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/081,327A

DATE: 07/25/2002

TIME: 08:42:12

Input Set : A:\SEQUENCE 081,327.txt

Output Set: N:\CRF3\07252002\J081327A.raw

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164	gggatataac tagtgccggcc gcctgcaggt cgaccataat	gagttgttagc aaatccacac	120
166	ttttagtgtg ggaggaggag agctggggc caatgtttgt	ccaactgttt attttcgag	180
168	acccagccta ttgaggaagg cttgttcaag caggttcgt	tcctacaaac acacaaacat	240
170	cttctgttt gcctacaaag aaaagggac cagcgttgc	tttgcattgcg aatgaggagc	300
172	cccgggagga gacgtcctt cccatcaaag gccgcggtag	cctggcgcc ctcagcctt	360
174	gttccagcac ctgctcgct gcacggcctg acggggccgc	gccccgcgt cctggctcgc	420
176	ccatccaggg tccacggcct actcgccct cgcctgcccc	gcggccacac ctctcgcagc	480
178	tcatacctca cccggccccc gcccctgtt ccccccagtct	catcctctcg ggagcaggcc	540
W--> 180	cgcagggtct gcaaggccaa gaacggaacc ccaaacgcan	agggtgggga ggtgagccgg	600
182	caggacgcaa aactcggaaat cgaggcggt tgggttaca	cgttcctta ctctggctca	660
184	cgctggctt cacctggta tggagagct tcccaacgcg	ttggatgcat aacttgagta	720
W--> 186	ttctatagt gcacctaataat aagctttggc gtaaaacatgg	gcatanctgg ntccctgngt	780
W--> 188	gaaattggta tccgnntcac aattccccac aacataacaa	gccccggaaagc nttaaagngg	840
W--> 190	aaaagctggg gtgcctaataat agggactnac tcacattaat	tgcgntggc ttacttgc	900
W--> 192	nttttccaan cgggnaaaac tttcngncca acttgcattt	aatgaatcgg caaancccc	960
W--> 194	ngnanagggc ntttngnnaa tgggccttt ccctcttgc	ttnnttaatn nntngntng	1020
W--> 196	gccnttgggtt nngcaacggg ntaantantn aaaggggggg		1059
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200 <211>	LENGTH: 895		
201 <212>	TYPE: DNA		
202 <213>	ORGANISM: Homo sapiens		
204 <220>	FEATURE:		
205 <221>	NAME/KEY: misc_feature		
206 <222>	LOCATION: (1)..(895)		
207 <223>	OTHER INFORMATION: All n's are unknown		
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W--> 213	accataaata tagagccaaa ccgtccaccc agccgtggcg	cgaatctttt gncccccac	120
215	tctcaagtgt ccttggctc tggagctctt gggccgggt	tccgcattccg ggaggagaaa	180
W--> 217	ggagcgagcg cgcacgggtgc ctcccgaggg cagggagcan	aggagaggaa aggggaagac	240
W--> 219	tatgaaacgt nctaactaat ggcgtactg aatgcgcatt	cacgtggtca gttaccatg	300
W--> 221	tgcttctctc tctcttggcc cgcaggagaca gagcgcgc	gggacgtgcc agccccggnc	360
W--> 223	ccggctctgc acatttacta tttttttttt tgnagtcatt	ctctctccca gtcctagatg	420
225	agatctttaga gtcacgc当地 gcttgc当地 tggacagac	taatgtatctg actttgc当地	480
W--> 227	gatgtcctga tgcccatcna aggacagaaa tcttggacac	ttgcggatgn gctttatggg	540
W--> 229	agaagctcca acgc当地ttgg atgcata	ttgggnattc tatagngc当地 ctnnatagct	600
W--> 231	ttggc当地naan tcatggncat ngntggntn ctgnggaaa	ttgttatccgg ttacaatttc	660
W--> 233	acacaacata caacccggaa gc当地aaatgt ngtaaagcct	gggtgccc当地 tnggggggng	720
W--> 235	ctaanttcca ttaatttgggg tggcncannt ggc当地ttca	gtc当地gggaaa accttggntgg	780
W--> 237	ccanctggnt ntnttgnnt ggc当地nncc gggagaggn	ggnnttgggaa anttggnnng	840
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243 <211>	LENGTH: 900		
244 <212>	TYPE: DNA		
245 <213>	ORGANISM: Homo sapiens		
247 <220>	FEATURE:		
248 <221>	NAME/KEY: misc_feature		
249 <222>	LOCATION: (1)..(900)		

RAW SEQUENCE LISTING

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Output Set: N:\CRF3\07252002\J081327A.raw

250 <223> OTHER INFORMATION: All n's are unknown
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 258 actgaggcga agaccgcgc ccggagtgtg gcccgccttc ccagtaaatc tgcttatgag 120
 W--> 260 aggaagtgtat ggaccagatg ctcaagggtt agggactaga ttttgcctta canaggacaa 180
 W--> 262 gtcagtctct gaagagaagt cgcggagagg gacgcanaac gcagtggac ggaanggtct 240
 264 cggggaaagt gggctgcgc agaagtgcga gggagctgt gggaaagtgcg gagagccgct 300
 266 gggattcggc cagaaaaagc gagagtgcgc gaacaagctt cacagaaatg gccttatggg 360
 W--> 268 agaactccca acgcgttgg tgcntagctt gantatctat agtgtccctt aaatacttgg 420
 W--> 270 cgtaatcatg gtcatanctg tttcctgtgt taaattgtt tccgctcn cn attccccgca 480
 W--> 272 cctacgaacc ngaaacctaa ntntaaacctt ggggtgctaa taattancna actccattt 540
 W--> 274 attgcnttgc cncctgccc cttccatcg gaaaaccgtc ttccacttn ttaatgaatc 600
 W--> 276 gccccccccc gaaaagggtt gcttttnggg cttccnttc ccccttaatc ctgnccngcn 660
 W--> 278 tcggtnccgn acgttcctcc ccagggat tgcgttccga acngggnncc gaaanntnac 720
 W--> 280 aagcctnagg cgacctnaag gcntncngnt tccnggnccc cccgananccc aatnaccctt 780
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 286 <211> LENGTH: 730
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 288 <213> ORGANISM: Homo sapiens
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 292 <222> LOCATION: (1)..(730)
 293 <223> OTHER INFORMATION: All n's are unknown
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 W--> 301 gttgagggtt gtcccttggg tcccaagaga agctgcccct cagaggctct cananccan 180
 W--> 303 gggacggggg ggtggagccc gttgcacagt catgcantgc anctggggca ggaagcgaga 240
 W--> 305 gtgaggagggg gggaggccac agcccgccga ngcaaggcgg gtgcagggtc tctgggacc 300
 W--> 307 gagggaggtt ccagaagttt agcccttgaag ccctgtggc ccctggcgc aggcccanc 360
 W--> 309 caggccccca nggatngac tctgnaccc gacatttcc atanaaaaacc cccgggaccc 420
 W--> 311 ctataaccc tccccggntg gttgnccgc ttttggnaa ttntttttt gaaaaccccc 480
 W--> 313 nccctttgg atccaactgn atttncttta ttttccccca aaactnggt tnnccagncc 540
 W--> 315 aaccntttcc tttttaaaat ttttncccc cccnttcccc cccctnnnaac ccccanana 600
 W--> 317 ntttttnccc cnggnntncc naaaatcanc ccccatttt tnccccccccc cnnctcngg 660
 W--> 319 aaanttttc tctntttta tntcccccc gaaaaaaggn ttttnnccc ccccccnaac 720
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 325 <211> LENGTH: 925
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 327 <213> ORGANISM: Homo sapiens
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 331 <222> LOCATION: (1)..(925)
 332 <223> OTHER INFORMATION: All n's are unknown
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RAW SEQUENCE LISTING

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DATE: 07/25/2002

TIME: 08:42:12

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Output Set: N:\CRF3\07252002\J081327A.raw

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W--> 342	accccacact	gnntnctnct	tggcggnnnn	tggggggct	cttagagggg	gtaagagcac	180
W--> 344	caggagcccc	aggcagcccc	gnctnccact	ctggctgccc	ggaccgtnc	ggagccacgt	240
W--> 346	ccctncccaa	aggaggcccc	ttacctgccc	gggcacctnc	cgggcgcctc	gcgtgtcggg	300
W--> 348	cccaaagcca	ccgaggctgg	gagccgctgg	ctatactcgg	tctctnctct	gcccgnccgc	360
W--> 350	ccccgagctn	ctactgcang	cgggcccgct	gcctnttctt	ggtcnnctt	gctagngccc	420
W--> 352	cncngctgan	ggcccatna	ncnntnccgg	aggagggagg	gaggccgctt	ggtgcccnnga	480
W--> 354	ggcggcggtt	ntattgctta	cttgnctnng	ggggtggggg	nntctnagan	tgggtcnanc	540
W--> 356	tnnntgggnn	ggctnctnn	gtngncccn	ctaangnnnn	gnhcatttt	tgcnnnnnga	600
W--> 358	nnngcncnn	nngngggnt	ttnnnnnaan	gtttttttgt	ctgannnnca	agcanngnn	660
W--> 360	tgganttt	tttggggggg	angnnccnc	nacnngnnn	gtanngntt	nnnnagttt	720
W--> 362	tnnnaggggc	cnnanagnan	ggnnnngngnn	nngntgatng	ngnttgcnn	ngntaggn	780
W--> 364	gnnnntncnt	tnnnatgnn	tnnnatnatn	nnngcnnna	ntngnngagg	gnatncntt	840
W--> 366	ngngnctnnt	gtngnntnt	ttcng				900
							925
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370	<211>	LENGTH:	1047				
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372	<213>	ORGANISM:	Homo sapiens				
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375	<221>	NAME/KEY:	misc_feature				
376	<222>	LOCATION:	(1)..(1047)				
377	<223>	OTHER INFORMATION:	All n's are unknown				
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383	gcggccgcct	gcaggcgac	cataactctc	gaggttctt	ctttcccccac	ctcatactgc	120
385	tagccctgac	gtgagggat	agggtgcctg	tcgcgtatt	cccatgtaga	tacgacagat	180
387	gaaacgtaac	tgcgggttggc	cagggctcc	gcagtggctg	gggcgcggga	gtgcgtct	240
389	ctgactttcc	gtgtccgggc	tcctgctcca	ggctggaaat	gtgtcttag	ctctcttagg	300
391	gggacctgga	ccttagggag	gagattggc	ggagcccg	gagtgtccc	aaccatggca	360
393	ccaccgtggg	cctggcttcc	tgcgagcgt	ccggctgtc	cctgccggg	catcggggtt	420
395	ccacgtcctg	gggagagacg	aagatgcct	gggaaagata	aacagccaag	ttttgtcccc	480
397	ggaggaaaaga	agcttggacc	ttgtccctgt	gtctgtcg	gggaggggca	ggggataagt	540
399	gcgggtgcct	gccccctcc	tttgtagaac	ttggcgctc	gcacccttta	taaacccag	600
W--> 401	gatccgaggc	cagaagttag	ntggtgccca	gnntagctgc	tgaatgggtt	gtggangaca	660
W--> 403	aggangtgg	tgctggccag	gaaagatgt	tttgtcaggt	angtacttcg	gacaagaaga	720
W--> 405	actntggccc	ctgagaaaga	acagaacca	aggcacttct	ggagcaattt	ctggcntggg	780
W--> 407	gtgataaaag	gaacttgg	tnaggcnaga	cacatnctt	tgggagaact	tcccaacgcc	840
W--> 409	gttggatcat	aactttgaga	ttctataagg	gcccctaaaa	aantttggcg	gaaannatgg	900
W--> 411	gcaaaaantt	ttccgggggg	aatngtann	ccntttacaa	attnccncaa	cntncgancc	960
W--> 413	cgaaccttaa	anggnnaaanc	ccggggggcc	taangngna	nctaactccc	attaaatgg	1020
W--> 415	nnngcnnnat	ngccnnttt	caannncg				1047
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420	<212>	TYPE:	DNA				
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425	<222>	LOCATION:	(1)..(634)				

RAW SEQUENCE LISTING ERROR SUMMARY
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; N Pos. 8,79,141,143,155,185,189,208,228,233,235,257,261,264,269,279
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 Seq#:2; N Pos. 695,697,700,701,703,705,707,718,719,720,723,726,728,730,736
 Seq#:2; N Pos. 740,746,748,758,774,778,779,780,783,784,786,791,794,797,799
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 Seq#:3; N Pos. 836,837,840,842,843,849,853,857,859,866,868,873,874,876,877
 Seq#:3; N Pos. 881,882,883,889,892,894,895,901,903,908,909,912,913,921,928
 Seq#:3; N Pos. 930,939,940,950
 Seq#:4; N Pos. 2,3,4,5,6,12,18,22,27,37,580,766,771,778,795,831,838,868,885
 Seq#:4; N Pos. 901,910,915,926,955,961,963,965,971,976,978,1003,1004,1010
 Seq#:4; N Pos. 1011,1012,1014,1017,1019,1024,1031,1032,1041,1045,1048,1050
 Seq#:5; N Pos. 3,112,220,251,359,393,499,530,576,586,593,594,607,610,617
 Seq#:5; N Pos. 621,623,627,630,634,684,691,712,719,725,745,748,749,755,777
 Seq#:5; N Pos. 784,789,792,797,798,799,806,807,820,823,832,837,838,840,842
 Seq#:5; N Pos. 851,858,869,886,892,894
 Seq#:6; N Pos. 80,107,233,277,295,444,453,497,528,530,551,561,563,587,589
 Seq#:6; N Pos. 606,612,613,650,687,697,714,717,720,726,730,746,763,767,775
 Seq#:6; N Pos. 776,778,787,797,803,805,807,809,814,817,825,827,834,845,856
 Seq#:6; N Pos. 868,883,884,893,897,900
 Seq#:7; N Pos. 2,15,79,173,175,180,217,222,271,358,371,377,386,400,404,438
 Seq#:7; N Pos. 445,458,463,481,500,505,526,532,533,538,545,565,574,586,587
 Seq#:7; N Pos. 596,599,601,607,612,615,616,618,621,629,642,653,654,658,664
 Seq#:7; N Pos. 674,682,700,705,707,717,724
 Seq#:8; N Pos. 10,11,14,23,29,35,40,128,192,195,198,207,262,265,288,305,339
 Seq#:8; N Pos. 406,416,430,439,455,466,467,476,482,484,490,499,501,503,504
 Seq#:8; N Pos. 506,538,551,565,568,581,582,586,590,597,599,602,603,604,609
 Seq#:8; N Pos. 610,616,619,620,623,625,626,630,635,637,642,649,654,655,656
 Seq#:8; N Pos. 657,661,662,663,666,670,671,672,674,679,683,684,685,686,687
 Seq#:8; N Pos. 690,705,706,707,708,715,717,719,720,725,729,734,737,742,744

RAW SEQUENCE LISTING ERROR SUMMARY
 PATENT APPLICATION: US/10/081,327A

DATE: 07/25/2002
 TIME: 08:42:13

Input Set : A:\SEQUENCE 081,327.txt
 Output Set: N:\CRF3\07252002\J081327A.raw

Seq#:8; N Pos. 745,749,751,754,755,758,759,760,764,765,767,771,772,773,774
 Seq#:8; N Pos. 782,783,784,792,793,795,798,800,803,804,805,807,809,810,811
 Seq#:8; N Pos. 812,814,819,821,823,828,829,831,833,838,840,842,843,844,846
 Seq#:8; N Pos. 849,852,853,854,855,859,860,861,863,864,867,870,871,872,873
 Seq#:8; N Pos. 877,878,879,881,882,885,887,892,896,898,901,903,905,908,909
 Seq#:8; N Pos. 913,915,917,919,924
 Seq#:9; N Pos. 6,9,23,621,633,656,665,702,724,776,802,807,816,883,895,896
 Seq#:9; N Pos. 907,925,929,930,933,944,947,952,954,958,972,975,979,994,996
 Seq#:9; N Pos. 998,1001,1020,1021,1022,1026,1027,1028,1031,1036,1044,1045
 Seq#:10; N Pos. 29,40,56,115,123,129,157,206,220,247,262,272,281,283,313
 Seq#:10; N Pos. 323,334,358,359,361,365,372,379,387,404,411,442,447,463,466
 Seq#:10; N Pos. 488,489,512,513,515,516,524,526,529,530,542,550,564,569,570
 Seq#:10; N Pos. 574,577,584,600,602,606,610,611,628,632
 Seq#:11; N Pos. 2,38,51,79,80,83,85,88,92,106,112,115,134,135,150,190,208
 Seq#:11; N Pos. 213,215,218,250,254,278,279,328,339,363,389,393,394,406,408
 Seq#:11; N Pos. 417,419,421,428,433,440,441,444,447,451,459,467,469,470,472
 Seq#:11; N Pos. 475,483,485,495,503,505,519,531,538,542,551,552,566,573,584
 Seq#:11; N Pos. 587,600,601,605,609,612,614,618,619,621,623,624,628,630,636
 Seq#:11; N Pos. 638
 Seq#:12; N Pos. 3,73,106,147,170,221,236,260,352,360,364,372,380,437,459
 Seq#:12; N Pos. 461,478,483,489,502,507,508,535,536,538,549,562,571,580,585
 Seq#:12; N Pos. 599,601,602,605,606,615,632,647,648,669,678,682,706,707,712
 Seq#:12; N Pos. 727,740,744,745,750,752,754,755,759,760,762,763,765,767,770
 Seq#:12; N Pos. 774,776,780,786,787,792,805,807,814,832,838,840,849,850,857
 Seq#:12; N Pos. 858,867,872,873,875,876,879,885,886,900,901,906,909,913,920
 Seq#:12; N Pos. 929,930,934,935,938,940,943,949,950,951,959,966,968,969,973
 Seq#:12; N Pos. 978,983,986,987,991,994,1003,1005,1006,1010,1017,1019,1020
 Seq#:12; N Pos. 1021,1024,1026,1027,1030,1033,1037,1041,1044,1045
 Seq#:13; N Pos. 132,147,173,188,190,196,198,213,235,261,268,293,297,312,325
 Seq#:13; N Pos. 337,340,353,400,418,424,430,431,444,446,476,479,481,518,522
 Seq#:13; N Pos. 539,542,555,569,572,576,579,600
 Seq#:14; N Pos. 33,74,121,145,165,170,179,182,185,197,203,206,226,238,256
 Seq#:14; N Pos. 271,279,299,300,310,317,326,331,343,347,367,377,381,387,390
 Seq#:14; N Pos. 410,415,417,418,423,435,438,440,443,450,451,455,460,478,487
 Seq#:14; N Pos. 489,491,494,511,512,513,515,519,522,523,528,534,537,539,540
 Seq#:14; N Pos. 544,549,552,555,559,561,563,569,584,587,588,596,599,600,602
 Seq#:14; N Pos. 608,609,611,617,619,625,632,635,636,640,651,655,657,664,665
 Seq#:14; N Pos. 675,680,685,687,689,690,693,694,708,713,719,723,724,730,732
 Seq#:14; N Pos. 736,737,740,742,745,746,748,750,754,758,760,767,773,774,777
 Seq#:14; N Pos. 778,780,781,783,787,791,795,800,803,811,812,813,818,824,825
 Seq#:14; N Pos. 832,834,836,839,844,846,848,851,858,859,860,863,869,870,871
 Seq#:14; N Pos. 872,873,877,880,884,885,895,896,901,902,904,909,910,913,915
 Seq#:14; N Pos. 916,919,920,923,924,927
 Seq#:15; N Pos. 5,202,212,242,247,254,255,256,275,292,305,307,319,332,336
 Seq#:15; N Pos. 341,384,385,398,420,429,447,448,451,452,458,464,472,485,488
 Seq#:15; N Pos. 490,503,506,516,528,533,542,544,550,559,563,567,575,584,598
 Seq#:15; N Pos. 600,608,609,612,617,621,624,625,630,633,649,656,657,658,663
 Seq#:15; N Pos. 665,666,673,677,678,684,696,697,712,715,716,717,719,729,731
 Seq#:15; N Pos. 734,738,741,742,743,744,770,771,787,788,789,790,792,794,795

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/081,327A

DATE: 07/25/2002
TIME: 08:42:13

Input Set : A:\SEQUENCE 081,327.txt
Output Set: N:\CRF3\07252002\J081327A.raw

Seq#:15; N Pos. 796,797,798,799,802,804,810,811,813,816,818,819,822,826,831
Seq#:15; N Pos. 832,834,835,838,846,848,857,858,861,867,869,873,874,877,881
Seq#:15; N Pos. 883
Seq#:16; N Pos. 91,411,472,485,503,528,537,542,544,550,565,566,573,603,613
Seq#:16; N Pos. 644,657,659,665,669,673,692,701
Seq#:17; N Pos. 3,44,117,129,130,185,220,346,352,379,400,402,415,419,473
Seq#:17; N Pos. 497,503,512,518,537,544,545,559,578,613,619,637,641,643,652
Seq#:17; N Pos. 655,660,670,675,679,683,684,689,696,698,703,706,709,712,714
Seq#:17; N Pos. 721,727,732,735,743,745,750,766,771,790,791,792,795,801,803
Seq#:17; N Pos. 806,807,809
Seq#:18; N Pos. 2,5,29,30,70,81,82,85,90,91,93,95,112,167,172,175,184,225
Seq#:18; N Pos. 231,239,240,255,260,261,270,273,275,301,304,317,335,351,367
Seq#:18; N Pos. 376,379,386,388,390,394,395,396,398,400,403,406,411,422,425
Seq#:18; N Pos. 430,434,438,447,458,465,467,469,470,475,481,482,496,505,515
Seq#:18; N Pos. 516,518,525,531,537,540,550,555,556,557,559,561,582,600,602
Seq#:18; N Pos. 603,606,619,621,624
Seq#:19; N Pos. 5,11,22,36,43,78,108,117,118,142,166,167,169,178,199,208
Seq#:19; N Pos. 210,212,225,227,235,241,250,259,263,279,300,314,319,320,332
Seq#:19; N Pos. 336,344,346,358,364,369,372,383,386,397,401,415,421,430,433
Seq#:19; N Pos. 434,441,463,465,474,481,482,511,518,520,525,527,530,535,538
Seq#:19; N Pos. 554,555,559,563,568,576,586,592,593,604,607,613,628,639,644
Seq#:19; N Pos. 650
Seq#:20; N Pos. 6,103,129,159,191,306,335,345,378,380,395,407,426,454,461
Seq#:20; N Pos. 463,468,471,506,509,510,525,564,570,572,574,578,584,600,613
Seq#:20; N Pos. 621,624,634,635,645,651,658,664,669,674,678,679,680
Seq#:21; N Pos. 1,2,8,9,16,17,18,19,20,21,229,271,311,317,398,410,415,421
Seq#:21; N Pos. 423,429,433,440,453,457,462,476,478,480,496,500,511,512,513
Seq#:21; N Pos. 514,517,520,529,534,535,546,547,550,554,558,570,573,574,587
Seq#:21; N Pos. 598,599,602,609,611
Seq#:22; N Pos. 6,7,12,22,25,30,32,56,60,111,114,125,136,138,143,194,202
Seq#:22; N Pos. 234,248,266,291,311,312,329,333,342,344,372,374,382,388,393
Seq#:22; N Pos. 400,404,416,444,448,449,455,467,482,488,497,507,508,509,518
Seq#:22; N Pos. 526,527,530,532,533,534,546,552,556,562,567,570,577,594,595
Seq#:22; N Pos. 597,609,610,618,619,621,626,630,642,643,645,648,650,652,661
Seq#:22; N Pos. 672,673,676,681,685,687,690,694,697,699,702,706,712,716,718
Seq#:22; N Pos. 722,726,730,731,734,741,743,744,747,753,761,762,767,769,770
Seq#:22; N Pos. 771,773,774,784,787,797,802,804,810,833,837,839,840,843,845
Seq#:22; N Pos. 849,850,853,860,861,868,871,876,877,885,886,892,893,894,899
Seq#:22; N Pos. 900,915,920,923,932,940,952,959,963,965,972,977,990,992,996
Seq#:22; N Pos. 998,999,1004,1013,1017,1019,1021,1026,1029,1030,1034,1035
Seq#:22; N Pos. 1039,1040,1058,1060,1061,1062,1064,1068,1074,1075,1077,1078
Seq#:22; N Pos. 1080,1087,1088,1091,1095,1096,1101,1108,1116,1132,1141,1147
Seq#:22; N Pos. 1149,1150,1157,1158,1164,1165
Seq#:23; N Pos. 11,13,58,100,178,184,209,224,300,351,374,426,440,455,477
Seq#:23; N Pos. 496,510,523,527,531,547,549,554,568,569,578,582,595,602,606
Seq#:23; N Pos. 616,618,624
Seq#:24; N Pos. 1,4,7,8,9,13,15,16,17,21,64,66,67,68,69,70,76,77,84,101,106
Seq#:24; N Pos. 112,137,146,151,171,184,190,192,241,251,252,256,258,274,296
Seq#:24; N Pos. 304,306,325,329,341,343,372,399,417,435,438,443,467,471,474

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/081,327A

DATE: 07/25/2002
TIME: 08:42:13

Input Set : A:\SEQUENCE 081,327.txt
Output Set: N:\CRF3\07252002\J081327A.raw

Seq#:24; N Pos. 501,508,510,527,547,548,557,558,564,566,568,575,583,589,591
Seq#:24; N Pos. 595,599,601,602,604,609,610,614,616,617,618,624,627,640,652
Seq#:24; N Pos. 657,659,663
Seq#:25; N Pos. 48,78,184,212,282,293,376,398,414,429,442,466,470,473,486
Seq#:25; N Pos. 491,514,519,525,541,544,550,572,598,605,626
Seq#:26; N Pos. 372,418,420,433,452,474,487,493,498,514,535,549,554,556,559
Seq#:26; N Pos. 566,567,569,583,586
Seq#:27; N Pos. 251,278,322,334,340,356,357,367,370,401,413,414,420,432,441
Seq#:27; N Pos. 447,452,453,458,459,462,489,497,504,510,515,519,530,536,540
Seq#:27; N Pos. 544,545,557,559,560,564,577,581,582,583,589,596,597
Seq#:28; N Pos. 19,35,73,76,82,135,206,209,213,215,217,236,238,245,247,256
Seq#:28; N Pos. 267,281,292,300,308,331,356,358,363,378,406,410,412,418,422
Seq#:28; N Pos. 440,471,475,477,485,513,516,551,561,564,572,580,610
Seq#:29; N Pos. 3,74,171,187,203,258,265,282,294,297,300,307,315,340,355
Seq#:29; N Pos. 360,367,373,374,386,392,401,427,432,433,439,441,449,457,458
Seq#:29; N Pos. 476,480,493,496,497,504,509,517,523,526,527,533,543,551,552
Seq#:29; N Pos. 554,556,558,563,564,565,570,576,577,579,581,582
Seq#:30; N Pos. 1,3,9,10,18,20,21,183,287,386,413,418,421,434,438,442,452
Seq#:30; N Pos. 456,458,463,468,469,473,475,496,505,506,511,529,533,535,537
Seq#:30; N Pos. 539,540,544,545,547,554,562,570,571,577,582,584,585,590,592
Seq#:30; N Pos. 598,599,600,609,614,618,620
Seq#:33; N Pos. 45,64,139,140,175,191,220,229,238,246,265,292
Seq#:34; N Pos. 182
Seq#:35; N Pos. 140,183
Seq#:36; N Pos. 59,104,168,193,219,239,250,266,284
Seq#:41; N Pos. 49,112,135,159

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/081,327A

DATE: 07/25/2002

TIME: 08:42:13

Input Set : A:\SEQUENCE 081,327.txt

Output Set: N:\CRF3\07252002\J081327A.raw

L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:37 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
L:39 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:60
L:41 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:120
L:43 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:180
L:45 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:240
L:47 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:300
L:49 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:360
L:51 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:420
L:53 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:480
L:55 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:540
L:57 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:600
L:72 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
L:74 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:60
L:78 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:180
L:80 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:240
L:82 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:300
L:84 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:360
L:86 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:420
L:88 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:480
L:90 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:540
L:92 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:600
L:94 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:660
L:96 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:720
L:98 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:780
L:100 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:840
L:102 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:900
L:117 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0
L:119 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:60
L:121 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:120
L:123 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:180
L:125 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:240
L:127 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:300
L:129 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:360
L:131 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:420
L:133 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:480
L:135 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:540
L:137 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:600
L:139 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:660
L:141 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:720
L:143 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:780
L:145 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:840
L:147 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:900
L:162 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0
L:180 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:540
L:186 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:720
L:188 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:780
L:190 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:840

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/081,327A

DATE: 07/25/2002

TIME: 08:42:13

Input Set : A:\SEQUENCE 081,327.txt

Output Set: N:\CRF3\07252002\J081327A.raw

L:192 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:900
L:194 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:960
L:196 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:1020